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ABSTRACT

In discussing how the use of research findings can improve teacher education program, a parallel is drawn between preservice education courses for physical education teachers and commercial training courses. A number of design and personnel characteristics that have application in teacher preparation are identified. It is pointed out that commercial training programs are client-oriented to a far greater degree than teacher education programs, and that research findings have indicated the effectiveness of this approach. However, while teacher educators have access to the research literature on teaching and teacher preparation, it does not necessarily follow that recourse to such knowledge is a normal part of program operation or curriculum development. The problem of helping physical education professors become more comfortable with research is discussed within the framework of not only individual effort but also of concerted and collegial effort on the part of the faculty within the department. (A 71-item bibliography is included.) (JD)

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# RESEARCH AND THE IMPROVEMENT OF TEACHING:

# THE PROFESSOR AS THE PROBLEM

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RESEARCH ON THE IMPROVEMENT OF TEACHING:

THE PROFESSOR AS THE PROBLEM

How sweet it is to be together again . . . international friends from around the world and colleagues from across North America. Given the number of new names in the program and unfamiliar faces in the audience, it is clear that AIESEP is healthy, growing and alive in Garden City.

My job is only to get things started, to help people refocus their intellects after a summer of happy indolence. With a homogeneous and task-oriented group of conferees such as ourselves the opening address need not be especially profound or particularly entertaining. In fact, as the Organizing Committee was at some pains to point out, it should not even be very long. Apparently someone from Adelphi has heard me speak before.

As suggested by the title, I want to examine the performance of professors not as producers of knowledge, but as consumers and users. As a clear majority of the people in this audience are professors, scholar/educators of one kind or another, this will be a highly personal rather than a highly abstract presentation. This is going to be about "us," not about "them."

The outline has three main parts:

1. some comments on the significance in the timing of this meeting,

2. some simple definitions of words, so that we shall understand each other, and
3. a set of six naive questions about professors, research-based knowledge, and the work of teacher education.

For the hosts today, physical educators at Adelphi University and throughout the USA, the occasion has special significance. August marks the centennial of events which were to impel and shape the course of sport and physical education in our nation. Those events began with a man who understood the need for communication among professionals, and thereby the power of the conference.

William G. Anderson (the elder) did not invent either physical education as a subject of the school curriculum, or teacher education as a training enterprise. His unique contribution was the simple relaization that it would be helpful if the people who directed "hygenic exercise" in schools, colleges and agency settings could get together and talk about their work and problems. The idea was such an immediate and popular success that we really are commemorating not one meeting, but in fact three invited conferences which took place in 1885. That simple idea of a conference for teaching specialists in physical education provided the soil in which our sense of shared vocation and common cause was to root and, ultimately, the place from which our national organizations, both The American Alliance and The National Association, were to grow.

So it is that we remember and celebrate the vision of an early leader. Given the professorial proclivity for having mixed-feelings over almost anything, however, it will surprise no one to discover that August 19th also can be the occasion for some ambivalence, or at least some somber reflection. It was in 1885 that the small list of subscribers to the then fledgling journal, Education, opened their latest copy to discover an article titled "The Normal School Problem" authored by William Howard Payne (1885) of Michigan University. As a translation for our guests from abroad, the "normal school" was an early two-year version of collegiate teacher training.

From his Olympian position in what may have been the first Professorship of Education in the USA, Payne argued three points. First, far too much attention was paid to practical methods of instruction in the preparation of teachers. Second, what would serve teachers far better would be immersion in the liberal arts and foundational subjects such as psychology and the history of education. Third, the study of Education was not the study of pedagogy (how to teach) which, as a technical intrusion into higher education, threatened rather than supported the production of effective teachers. To Payne, method was merely a stylistic expression of the far more important intellectual qualities of the teacher. He clearly doubted that pedagogy could be the object of serious study and his opinion concerning its study in the normal school was unambiguous. "In proportion as the technical element

[methods of teaching] is brought into prominence, the course of study will lose its value, and by so much will diminish the real teaching-power of the pupil." (p. 391)

From that opening salvo it was little time until pedagogy became for some the maligned "bag of tricks" and for others, the heart of an emerging profession. In a single swift stroke, Payne had opened a Pandora's box of contentious disputation. As the actions of state legislatures (Corrigan, 1985; Friedman, 1985), national commissions (Haberman, 1984) and prominent physical educators (Siedentop, 1985) will attest, one hundred years has not been enough to resolve that tangled snarl of issues.

It is appropriate then, that we begin our week together in 1985 by remembering the heritage bequeathed by both Anderson and Payne: on the one hand a self-conscious profession organized to advance its own interests and those of the clients it serves and, on the other hand, disquieting questions about the legitimacy of pedagogy both as a proper subject for study in the teacher preparation curriculum, and as a suitable object for scientific inquiry.

With our professorial ambivalence now properly established, we can turn to a short lexicon of terminology and the meanings arbitrarily assigned by me for the next 30 minutes. The terms occur in four pairs, the first of which is

RESEARCH ON TEACHING

and

RESEARCH ON TEACHER EDUCATION.

The two are not the same. Research on teaching includes investigations which examine the impact of what teachers do upon what students learn. In contrast, research on teacher education includes investigations which examine the impact of what teacher educators do upon what teachers learn about their work. There are hundreds of methodological and paradigmatic variations on those oversimplified definitions, but they make the distinction sufficiently clear for our needs.

The second pair is

DOING RESEARCH

and

USING RESEARCH.

While making a distinction between the two may seem so obvious as to be gratuitous, it is surprising how often we mix them in ordinary speech. Doing research requires the actions of systematic inquiry, while using research involves both contemplation of prior findings and their employment in some act or decision.

The third pair juxtaposes the words

PROCESS

and

CONTENT

as used to designate different aspects of a teacher education program. Content designates collectively the knowledge, skills and

dispositions which the teacher educator intends the teacher (novice or veteran) to acquire. The processes of the program are the various activities and arrangements they employ to accomplish that goal.

For example, if you have read some of the recent research on teacher clarity (Cruickshank, 1985; McCaleb, 1984; Smith & Cotton, 1980) which includes study of strategies which can help teachers make themselves understood by avoiding vagueness and verbal mazes, you might be inspired to add a new module on teacher clarity to your methods class. In sorting through the literature to determine what to teach your students you would be using research to determine the content of your program.

With the new module in place, however, you might remember reading the Joyce and Showers (1980, 1981) reviews of the literature dealing with the component parts of teacher training. Rereading them might well inspire you to invent a discrimination test which would make sure that after modeling clear and vague instructions for your students they could reliably tell the difference when given some audio-taped examples. In this case, research helped you to decide not the content of the module, but how to use it . . . the process of your program.

Fourth, and finally, it is convenient in this context for me to distinguish between

TEACHING

and

DOING THE STUFF TEACHERS COMMONLY DO.

This gives the word "teaching" a more restricted definition than we ordinarily use. I do so here to underscore the difference between acting like a teacher and performing the critical function of a teacher. To do the stuff teachers commonly do, in the absence of any discernable consequence for student learning, is different from orchestrating those things in the special ways that lead regularly to the changes we call learning. The former I call doing teacher stuff and the latter I call teaching. The distinction is the same one used in resolving that old chestnut from your philosophy class, "If a tree falls in the forest, but no one is there to hear it, was there any sound?" When someone does teacher stuff all day, but without any consequent change in what pupils know, feel, or can do, there was no teaching done--only someone acting like a teacher but not performing the critical function.

We have George Bernard Shaw to thank for that venomous quip which can raise a teacher's fur at any time, "He who can, does, and he who cannot, teaches" (Man and Superman, Act IV), to which some of us might add, ". . . and those who can neither do, nor teach, become university administrators." But I digress. Shaw's nasty

jibe is a canard, something patently untrue, but used to malign or, as in Shaw's case, to have sport at the expense of the innocent victim. It is untrue because it is obvious to even the casual observer that anyone holding a job as a teacher spends the entire day doing all manner of things. To the close observer, at least, it even is doing hard and difficult work. Notwithstanding, unless the teacher organizes and selects the stuff of daily work so as to form the precursors of learning, Shaw is quite correct--they indeed are people who "can't do," for by my definition they are not doing teaching.

In contrast, some teachers learn how to put stuff together, doing the right thing at the right time for the right students, and consistently getting the desired result. They have a sense of the rules which govern the transactions that lead to learning. Often those rules are tacit, private, idiographic and difficult to communicate or extract, but once the rules begin to accumulate in a teacher's repertoire, real teaching becomes possible. Those who lack such a raod map of events in classroom or gymnasium are just "travelin on." Sometimes they get somewhere and sometimes they don't, and they rarely know why.

With that short dictionary in hand, we can now turn to an examination of professors and what is going on in the world of research and teacher education. For the study of teaching these have been vintage years. If you are interested in understanding how teachers do the work of instruction, this has been a good time to

be alive. When I go into the gym or onto a playing field there is so much more to watch and so much more that now makes sense. Just in terms of concepts and technical language, probably half of what we will talk about at this conference would have been impossible to discuss in 1965.

I wish it were possible to say the same thing about research on teacher education, but we are only beginning to ask sophisticated questions concerning how teachers learn to do their work (Evertson, Hawley & Zlotnik, 1985; Feiman-Nemser, 1983; Koeler, 1985; Lanier, 1984a; McDonald, 1977). It is clear, however, that the long dry wait is over. We are about to learn more than we ever wanted to know about teacher education. Not all of the news will be happy I fear, but it will be fascinating nonetheless.

All of this vintage year talk, of course, reflects one point of view. It is the vantage point of a person who enjoys learning about how things work, the understander. But what about practical benefits? For most of us just understanding is not enough, we expect research to do more. Whether by explicit personal commitment, or simply by unconscious adoption of a cultural assumption, many of you in this room expect research to have the power to make practice better. Such is the point of view, that of the improver.

For the real improvers among us these have been years of frustration and hard lessons. Instead of the heady wine of satisfaction too often there has been the bitter beer of failed expectatiors. The dissemination of new ways to teach derived from

what we have learned from research on teaching, turned out to be far more complex than just scattering the seeds of wisdom among practitioners. In fact, using traditional modes of spreading the good word from research turned out to be more like Johnny Appleseed sowing the Gobi Desert.

The reason that research on teaching has had little easy influence on the conduct of education, in the gymnasium or in the classroom, turned out to have a stark kind of simplicity once it was understood. What teachers do in schools is usually done for good and sufficient reason--it works. It works in the sense that it is rationally responsive to the social system in which the teacher must operate day-by-day. Good, bad or simply indifferent relative to the goals of education, what teachers do is a response to the prime factors of school life: (a) NUMBERS--teachers are one and the pupils are many; (b) TIME--there is never enough and the pace of work is externally driven rather than following the needs of the inhabitants; and (c) POWER--teachers have extensive rights to intrude on the lives of their charges, but unless they can win a measure of compliance and collaboration from pupils, teaching is impossible.

Any so-called improvement must respond first to those prime factors. Many recommendations for improvement based on research have not been well tuned to the facts of school life because they were derived by logical operations in the aseptic world of the university. Successful improvers have not been those who simply espouse powerful innovations in pedagogy, but have been those who

learned how to help teachers adapt new ideas to the hard realities of numbers, time and power.

That is not the topic here, however, for if we are interested in professors then it is the employment of research-based knowledge to improve teacher education programs that is our central concern. This is where we might have expected great things, in theory at least. Professors have immediate access to research. Professors understand the complex language of research reports. Professors are ideally situated to see practical implications of new knowledge for their own work. Professors have relatively high levels of control over content and process in their programs. Professors are always exhorting others to use research as the rational basis for everyday decisions. Fertile ground for revolution, indeed.

Research could have had any of several kinds of utility. It could have informed decisions about content. It could have suggested powerful processes and ways of organizing training programs. Research, in the forms of reports and reviews could even have been used as program materials (Griffin, 1984). There is no lack of ways through which to use research in teacher education. It should not be difficult to track the influence of research, if there is any to detect, so we can proceed in a straightforward manner.

I will pose some simple questions of the kind that naive outsiders would ask. If you went home from Adelphi to rejoin your colleagues and announced that having heard a lot of research you have decided to improve the teacher education program by using your

new knowledge, people would ask things such as "Why and How?", "Will it work?", "Do you really know enough?" and "How will you get other people to try your ideas?" Those questions may sound naive, but they are not unreasonable.

WHY AND HOW? Why do you look to research for practical help and how do you expect it to be provided?

The best place to begin is to indicate what not to expect from research. If you ask research reports to tell you what to do, in the sense of providing instructions for action, you are asking for disappointment. Most educational research provides findings from the process of inquiry, not solutions to problems. If a study shows that physical education teachers use 34% of their class time on management tasks (which is a finding), it is unlikely that the report will contain any instructions for getting teachers to use only 5% (which is a solution to the problem).

You, or even the researcher, might elect to do some careful thinking and field testing to produce a handbook for use in helping veteran teachers change their unfortunate management behavior. That, however, would involve developing an intervention based upon an idea drawn from research, not the discovery of a solution in the research literature. The idea that research reports are supposed to give solutions to school problems, answers to teachers' questions and decisions about what is best to do, is a mischievous misunderstanding and the cause of enormous confusion and disappointment.

Research can do one thing in addition to providing findings. What reading research does is make you smart! You can make yourself better informed about almost any topic you pursue in the literature. The significance of such pursuits rests in the fact that people who are smart about the area in which they have to solve problems sometimes possess a clear advantage. They are able to see more detail in a situation, some of which inevitably is missed by the less well informed. They often see more options for action, frequently of the kind not imagined by those who have not used research to help in understanding how things work. Finally, the research-smart practitioner is more likely to select or devise a powerful rather than a weak course of action. There are, of course, no guarantees for success, but the benefits of being smart are not inconsiderable advantages to have on your side.

The reality of using research is complicated because, as everybody knows, being smart is just a small part of what goes into doing a good job of anything. The familiar "applications" model of research utilization (the notion of technical rationality which permeates all of the physical education literature dealing with research), now is widely regarded as an oversimplification (Buchmann, 1983; Egbert, 1984; Emans, 1982; Feiman-Nemser & Ball, 1984). Only rarely is it possible for teachers or teacher educators to solve problems simply by using knowledge in a straightforward, unproblematic fashion (Fenstermacher, 1983; Spaulding, 1977; Tom, 1980). At the least, there are fundamental problems caused by the fact that

research knowledge is <u>not</u> created for teachers to use in classrooms, and by the fact that real world problems rarely fit scientific categories.

In the professor's world there is an even more serious defect in the simplistic idea of research application. It ignores other vital sources of knowledge and warrants for action. To take an example from teacher education, when you design a new course many different things have to be considered besides whatever knowledge you may possess. At the least, there are

personal commitments.....what you happen to value in the content

consensual moral standards.....what is considered ethical in your profession

personal style.....what way of teaching is effective for you

local constraints.....realistic options given time and context

experience.....student evaluations from your last attempt

knowledge.....what research has taught you about process and content in that area.

In practice, all these elements are mixed together to produce a course outline and a set of teaching behaviors. Clearly research did not tell you what to do. It was one resource among many considerations. With regard to some questions, of course, research

has to be given by far the greatest weight, but it is rarely the final and solitary arbiter in any educational decision.

There are some sound reasons to make research-based knowledge a regular part of the considerations used in deciding how to teach. It has a special advantage over other ways to arrive at what is known. First, research on teaching can help to make explicit, public and accessible information which ordinarily is implicit, idiosyncratic, or unstructured (for example, the personal rules which permit some teachers to be teaching nearly all the time). Research can identify, separate, sort, codify and generalize the often intuitive sources of effective instruction, thus forming a bridge between the observer and the inner worlds of teachers and students. Second, research can detect regularities which teachers or coaches are unlikely to notice. Some important things are invisible to the teacher (for example, details of the student sub-culture), or are too complex to detect as natural events (for example, the interaction of trials, task difficulty and entry skill level among students learning to swim). Third, research can make us see what we don't expect or don't wish to know.

Have you looked recently at the research dealing with the effects produced by correcting written homework, carefully marking student errors in the margins with your red pencil and handing it back at the next class? Don't do so if, like me, you have invested thousands of such laborious hours over a professional lifetime. The truth may make you free, but it sure can hurt in the process.

To sum up the answer for our first naive question, "Why and How?", it can be argued that research is a valuable (sometimes superior) addition to experience and common sense. Although there are occasional instances when it provides "the" answer to a question of practical import, most of the time it functions best as a way to make ourselves smart about the problems we have to face.

WILL IT WORK? Is there any evidence to suggest that the program will produce better teachers if the faculty uses research in revising content and process?

The honest answer is that with regard to programs, nobody really knows. There aren't any relevant data to examine. There are no studies using a deliberate program variation design in teacher education. There even are very few program evaluation studies which follow graduates into the field to assess their performance--and none that I know of in physical education. There is nothing in the research literature to guarantee that any one program paradigm (Zeichner, 1983) or any one structural model (Schalock, 1983), whether research-based or not, will be more effective than any other. What we do know something about are individual program components. It is at the level of process elements, not whole programs, that research offers some utility.

Pause for a moment and think about the factors which cause teachers to do whatever they do on any Monday morning. Much of the enormous variety in teacher behavior (in technical terms, the "variance") would come from endogenous factors such as intelligence,

personality and, physical characteristics, as well as from situational factors such as the explicit physical conditions and implicit social norms of each workplace. We can set those aside because they are outside the immediate influence of any teacher education system. The rest of the variance in teacher behavior is accounted for by what teachers have learned to do as teaching acts. These are the things teachers acquire when they learn how to teach.

Teaching is learned from four primary sources. The experiences of presocialization, those twelve years of apprenticeship served as pupils in schools, provides the first source of what teachers know. Lawson (1983) tells us that recruits to college teacher training enter with elaborate subjective warrants about their chosen vocation. Novices already know and believe a great deal about physical education long before they ever encounter a professor.

The second venue for learning to teach is formal teacher training in an undergraduate program. Because programs rarely employ formal assessments which require the demonstration of specific teaching skills or pedagogical knowledge at exit, it is difficult to know what actually has been acquired by novice teachers (which they did not possess at entry). As for attitudes and values, those dispositions required if graduates are to employ and persevere with whatever pedagogy they have learned, research is mute--the cupboard is bare.

The third source of teacher behaviors is experience, particularly that acquired during the first several years when the process

of induction into the school culture provides a potent period for teacher learning. That is when the "other teacher educators," pupils, peers, administrators and parents, tell and model what a good teacher must be like. The fourth and final source of teacher behavior is inservice education in the form of teacher development activities. In the case of physical education teachers, however, this presently is an inconsequential source of influence (Placek, 1985a).

Taken collectively, that is an extensive set of sources for teacher behavior. Transposing a term from curriculum theory, the truly functional curriculum (Dodds, 1983, 1984) of teacher education extends across as many as eighteen years (presocialization, training and induction). Clearly it is a serious semantic error to define the term "teacher educator" as though it were coterminous with the word professor. In that long process of socialization into the role of teacher/coach there is a great deal which we have yet to understand, much less control.

Teacher preparation programs represent one source of influence within a network of influences. At its best, teacher education can never be more than one strong element among many. When we talk about using research to strengthen teacher education programs we are not dealing with trivial tinkering. A realistic perspective, however, warns us that there are some limits to what can be accomplished.

Returning now to the question "Will it work?", the logic of the improvers runs as follows.

> [Teacher education programs in physical education mostly are weak treatments. The effects, if any, just get washed away when graduates enter full time teaching. Thus, the task is to make the program strong enough to have a lasting impact. The way to make undergraduate programs strong is to help professors become committed to the proposition that their job is to change novice teachers in specific and verifiable ways. Graduates will then persevere with the kinds of effective practice strong programs can give them, and the quality of school physical education programs will rise over time.]

As you can detect, improvers believe that there are such things as effective teaching behaviors, and that teacher educators should be accountable both for their transmission and for verification of their acquisition.

Given all of the previous discussion about sources of teacher behavior, the improver has to face a further question. Could formal teacher preparation in its present format ever be made powerful enough to overcome wash-out effects caused by already potent sources in the schools? Here again the improver's reasoning is straightforward.

> [The question betrays a misleading assumption. Presocialization and induction experience have been made to look relatively powerful only because we have done such a poor job of helping teachers learn in preparation programs. Teacher educators typically lecture at undergraduate majors for several semesters, feed them a smorgasbord of disconnected facts and experiences and then hand them over to cooperating teachers who proceed to teach them the real facts of life. Under conditions like that almost anything would look stronger than the formal teacher preparation program.]

From this it is clear that improvers believe programs which demand particularized demonstration of teaching competence could produce lasting effects. Further, it is presumed they can do so even if the skills and dispositions acquired are in direct conflict with what teachers ordinarily learn in school, either before or after collegiate training.

My own guess is that creating programs with such power will rest on something more than just building better pedagogical training components. Professors will have to come directly to grips with the effects of presocialization. This means taking seriously what undergraduates already have learned about schools, teaching and sport. Professors also will have to come to grips with the qualitative problems associated with all of the clinical training experiences embedded in the program. Both research and experience

make clear that as exercises in dissonance, many clinical experiences serve to weaken rather than strengthen program effects.

Finally, the most fundamental impediment to development of powerful research-informed teacher preparation programs may rest with a factor not addressed until recently by anyone, understander or improver. How professors define what they are about influences both structure and process in teacher education. Despite labels such as methods and student teaching, preservice education is neither organized nor conducted as professional training. In a terse and incisive analysis Weil (1985) put her finger on the professorial role as the root cause of weak programs.

> In most situations, content is still delivered in much the same way as it is in other college courses, and the goals of the education curriculum are still informational, not behavioral. <u>On the whole, professors do not conduct themselves as trainers but as knowledge disseminators</u> (emphasis mine). Thus, one fundamental obstacle to research use in preservice education is a lack of understanding of the distinction between education and training. (p. 67)

That was a long answer to the simple question "Will it work?". In one sense, it reflected the fact that we are dealing with elements which are far more complex than physical educators ordinarily care to admit. In another sense, however, the lengthy response reflected the true nature of the final answer, which is, "It might work."

DO YOU REALLY KNOW ANYTHING ABOUT EFFECTIVE TEACHING? Is there enough substance in the knowledge base to provide a reliable source of program content?

Here, at least, the answer is more than just a judgment call. Certainly we know enough to make a strong start. Members of AIESEP have more reason to know that fact than any other group of professionals in the world. The best testimony might be the Samaranch Prize winning textbook, Developing Teaching Skills in Physical Education, authored by Daryl Siedentop (1983a). If you prefer to be overwhelmed with research evidence, you can purchase a copy of the new Third Handbook of Research on Teaching (Wittrock, 1985), or if you like things a bit more predigested there is the incisive logic of Gage's Phi Delta Kappa Award monograph, Hard Gains in the Soft Sciences (1985).

Do we know enough about effective teaching? The answer by any reasonable standard is "yes," and it is long past time to stop equivocating and dithering about how much is enough! It was Smith who was right in the 1980s, not Payne in the 1880s. Schools and departments of education need first and foremost to be schools and departments of pedagogy, and the extant body of knowledge about teaching should be the root source of the work they do (Smith, 1980, 1985; Smith, Silverman, Bors & Fry, 1980).

DO YOU REALLY KNOW ANYTHING ABOUT TEACHING TEACHERS? Beyond the laying on of hands, is there a training technology sufficient to make reform in teacher education even a possibility?

Unlike the previous question, the answer here must be more restrained. Last year's JTPE Summer Monograph (Locke, 1984) at least demonstrated that it is possible to run on at great length on the topic of research on teacher education for physical educators. More to the point, as convincingly demonstrated by Siedentop in his Pre-Olympic Congress paper, "The Modification of Teacher Behavior" (1984b), there is a solid body of evidence demonstrating that it is possible to change what teachers (veterans or new recruits) do in the gymnasium. In fact, we may need a moratorium on such special intervention studies so that we may turn to a simpler but now more directly relevant question, "What's really going on in those method courses?" (Placek, 1985b).

In addition to the existing body of research, there are examples of research-based teacher training programs which suggest that there are workable process components which might be imported into physical education (Crawford & Gage, 1977). The teacher learning laboratories and short courses first demonstrated at the Far West Regional Lab in San Francisco (Berliner, 1984a, 1984b, 1985), have an imposing record of success. Substantially based on exportable materials (simulations through VTR, case study protocols, learning games and microteaching exercises), most of them are aimed at immediate skill development in the training context. Within the limits of their

intent, which usually is acquisition rather than transfer, and their content, which usually involves relatively discrete units of pedagogy rather than larger scale teaching strategies, they are both cost-effective and well regarded by teachers. Although ambitious proposals have been made (Locke, Mand & Siedentop, 1981) nothing of the kind exists in physical education.

At the level of theory, there is Joyce and Showers' model of teacher training (1980, 1981). Based on a body of evaluation research on inservice education gathered over a 20-year period, the proposed program makes few technical demands and consists only of a suggested sequence for program components. There is no question that it could contribute directly to redesign efforts in preservice programs.

For myself, some of the most impressive evidence comes from an enterprise that is little recognized as a potential model for some aspects of teacher preparation. This is the commercial training industry which prepares people to use complex skills--and does so for profit. During the past year I have had the opportunity to examine commercial training course development in some detail.[1] In such educational modules, for a stiff tuition fee and the investment of some intensive effort, you can learn anything from how to cook a fine souffle' to new interpersonal skills for managing people in a corporate setting, all in a surprisingly short period of time. By any of the conventional measures of success (demonstrated skills at exit, expressed client satisfaction, and return customers)

commercial training courses often work, and they do so in a context where not working is fatal. In the world of commerce, there is no tenure for the faculty.

From my observation notes I have extracted a list of characteristics which seem typical of training courses. It is instructive to match that list with the analogous traits which typify teacher education in physical education. All you need do is think of your student clients, your own faculty and how your program operates, and match those characteristics with the ones I found in commercial training courses.

1. <u>There is heavy investment in research and development</u>. This is the primary cause of the typically stiff course fees. There is a large research literature shared among commercial training specialists (they have their own journals). All program components are field tested, revised and refined. Because the company can't afford failure, nothing goes to the customer until there is convincing evidence that it will work. I found it interesting to match that style of development for commercial training modules with the way methods courses are created in a typical undergraduate program.
2. <u>Clients can walk out cold at any time and get their money back if not satisfied with what they are learning</u>. This seems to contribute substantially to the motivation of trainers to provide high quality instruction.

3. For a small fee, clients can recycle through the entire module any time after graduation. Further, they may do so as many times as needed (so long as they bring with them their original set of learning materials).
4. Most courses offer strong back-up for graduates. Telephone consultations are common and even field visits to help clients are included in some packages.
5. Most courses make heavy use of instructional media. The need for stimulus variation exerts significant control over all classroom processes. As one trainer put it, "Never do any one thing in class for more than 10 minutes--especially lecture." That provides an interesting contrast with much that goes on in teacher education.
6. There is frequent opportunity for clients to respond. The dictum that "the student has to do it to learn it," would provide exceptional ALT scores for most training courses.
7. Snacks, soft drinks and coffee are continuously available during the training period. Long, intensive sessions demand that learner needs be taken into account as a matter of reality, not rhetoric.
8. Courses tend to have carefully limited goals. Despite plenty of flashy salesmanship, commercial trainers are at some pains not to make grand claims beyond what they can deliver. Here the contrast with department brochures and college catalogues may be interesting.

9. Two considerations always are evident at the planning stage. First, get the skills into the client with enough background knowledge to prevent misuse. Second, make the client feel good about the process of acquiring the skill. This latter rule is critical in the training industry. When the customers feel good about learning, they tend to buy more of it. When they find learning painful or anxiety arousing, clients may not come back, even if they succeed in mastering the content. Juxtaposing that rule with the circumstances of my own Test and Measurement course has caused some somber reflection.
10. Students get armloads of take-home materials. Much of this consists of usable items rather than reference lists, reprints or instructional text. Emphasis is on providing material that is not available from other sources. Again, such tangible support for learning leans heavily on research and development processes which must precede marketing of the course.
11. The industry is capital intensive rather than labor intensive. A single instructor may run an entire module with assistance only from a media technician. This contrasts with teacher education programs which make heavy use of people and little use of technology in any sustained manner (Joyce, Howey, Yarger, Harbeck & Kluevin, 1977).

12. Modules are packaged so as to be short in days, long in hours and high in pedagogical intensity. For the most part, the industry eschews programs which would require more than a few days of client development. While this may represent a genuine difference from the task of teacher education, the use of training modules with similar temporal dimensions has been little explored in college programs (outside of CPR/First Aid).

13. The task of course design is one of extraction. Boiling down to basics from the mountains of things which might be learned is a fundamental service to customers. Training courses teach what is essential for practical action in the real world. Accordingly, in the process of curriculum development, trainers must ignore a great deal which might be considered relevant as foundational material. This is technical training, not liberal education.

14. The instructors are unusual people. While ordinary employees work in course development and day-to-day operation of the industry, only highly selected and trained individuals operate the courses. The analogue of interest here would be how teacher educators commonly set about determining who will teach methods courses or supervise student teachers next semester. My observation suggests that the people selected to serve as instructors in the commercial world must meet the following criteria:

a. capacity to sustain high enthusiasm for extended periods;

b. ability to handle both didactic and interactive modes of instruction;

c. high sensitivity to learner needs based on a large repertoire of pedagogical alternatives and adjustments;

d. ability to provide rich, explicit examples from practice for any point or question likely to arise in the course;

e. ability to model with confidence and precision any skill contained in the curriculum;

f. great personal charisma.

But, you ask, could they get tenure? Possibly not, but their income is commensurate with both the chanciness of the commercial world and their truly exceptional abilities. They would be very difficult to recruit for academe, even by dangling a full professorship.

Taken all for all, there appear to be a number of design and personnel characteristics in commercial training programs which might have application in teacher preparation. Our tendency to adopt uncritically the assumptions, processes and format of the college academic course may have limited the chances for genuine break-throughs in preservice teacher preparation. With that in

mind, the training program industry and its research literature may offer a source of fresh options.

DON'T PROFESSORS ALREADY USE LOTS OF RESEARCH IN TRAINING TEACHERS? As teacher educators have access to the literature on teaching and teacher preparation, it should follow that recourse to such knowledge is a normal part of program operation.

However much we might like to impress our naive questioner with a positive answer, the evidence points in the opposite direction (Clark & Guba, 1976; Ducharme, 1985; Judge, 1982; Yarger, Howey & Joyce, 1977; Wisniewsky, 1984). Research simply is not part of the ethos of teacher education, whether the issue is production, consumption, or utilization. A recent profile of the physical education professor indicates that we are no exception to this rule (Metzler & Freedman, 1985).

A report by Anderson (1982) provides a typical finding when research use is examined in the real world of teacher education. The subjects were five teacher training faculty groups. Each consisted of a curriculum development or program revision committee assigned the task of designing scope, sequence and content for an undergraduate program. All the committee members were professors, many of whom were themselves engaged in education research projects. Anderson simply tape-recorded all their meetings. An analysis of data extracted from over 100 hours of recorded committee dialogue revealed that less than one percent of the time was devoted to any discussion or process which made use of research. Instead of

knowledge, it was state regulations, student enrollment and faculty assignment to courses (who would get to teach what?) which occupied most of the time, and controlled most of the curriculum decisions.

Each of you will have to contemplate your own experience, but Anderson's finding would, in honesty, be typical of events in most committees on which I have served. He hypothesized that the reason for such small attention to research rests in the fact that any recourse to the knowledge base invariably leads to long discussions and, often, to arguments. As faculty members typically have little skill at confrontation, conflict reduction and consensus building, they avoid the complexities of research and focus on areas where the facts are established and agreements easier to formulate.

This explanation has been given considerable credibility by both Nolan (1985) and Patriarca and Buchmann (1983) whose recent evaluation studies of curriculum development in teacher education revealed that fear of confrontation and its divisive consequences often prevents any genuine give and take among faculty members concerning what is known and believed about teaching. This behavior has two apparent consequences. First, where research-based knowledge is not allowed to play a strong part in attempts to make curriculum content and process more powerful, the resulting

innovation often is nothing more than a rearrangement of tradition, supported by whatever folk wisdom is current among the designers. Second, where disagreements on fundamental issues of fact and belief are not addressed, the products produced by faculty efforts at program development simply are not implemented--irrespective of either their intrinsic merit or available resources. In the world of the professor, where the ethos of individualism rather than consensus is the dominant fact of life, acquiescence is not commitment.

Curriculum committees are not the only place to look for existing uses of research. A different and possibly more fruitful place is in teacher education courses themselves. Here, as you might expect, the picture is as complex as the professors who teach such courses. In a recent study of six programs, Champion (1982, 1984a, 1984b) found cause for both cheer and gloom. After interviewing faculty and administrators, and examining mountains of course materials, the good news was that research <u>is</u> used by professors in teacher education courses. The bad news is that the way they use research is unlikely to impress anyone.

Citation, vocabulary building, brief mention of results, and assignment of readings which contain some reference to research constitute the primary form of research utilization in the classes surveyed by Champion. Only 30% of the professors indicated that they ever presented an actual study in class. Uses such as citing or word gathering are rather unsurprising and certainly not powerful ways to use knowledge with students. When Champion asked professors "why do you use research in class?" 70% said it was primarily for consumer protection (to help students avoid confusion caused by research) and only 30% responded "because it has implications for teaching practice."

Reading through the material gathered in Champion's study of research utilization reveals a disturbing pattern. There are implicit but nonetheless clear messages communicated to students learning to teach:

1. you can't trust research--be wary!
2. your own experience is a more trustworthy resource when making decisions about teaching;
3. it is impossible to tell sense from nonsense in the research literature;
4. studies usually produce conflicting results;
5. researchers are impractical, naive people;
6. research is just too hard to understand.

With friends like that, research certainly does not need enemies While each of those themes in the pattern of professorial

communication is grounded in a grain of truth about the problems to be surmounted in using research, the overall picture is needlessly negative and cautionary. It is easy to understand why the teachers who come out of such experiences have little interest in research as a resource for understanding and improving practice.

What both Anderson and Champion found concerning the uses of research by teacher educators matches what others (Carter, 1984; Carter, Isham & Stribling, 1981) have found about the nature of the professor of education. With blue collar and middle class social origins, teacher educators often are highly suspicious of theory and place great reliance on personal experience. Of the 46 professors in a recent sample (Carter, 1984), only three nominated a teacher preparation program when asked "How did you learn to teach?" Forty-three either said "by doing it" or "by watching it." If that response were found to be typical of physical education professors, we would have a clue to the ambiguity which pervades so many programs, and perhaps to the small amount of attention given research. That possibility leads nicely to the final question from our naive friend.

WHAT REAL HOPE IS THERE THAT YOU CAN GET YOUR FACULTY TO DO IT? Putting research to use would mean changing how things are done, which sounds both serious and controversial.

That final question brings us to the bottom line for this small homily. If there is nothing to say which could persuade you that people like you and I might actually do something, then all of this

is just smoke. Because achieving collaborative action within groups of historically uncooperative and uncompliant people is the crux of this matter, the problem should be defined with great care before attempting a response.

At the outset, it is important to understand that it really doesn't matter what you or I do, or don't do. Individual professors acting in individual ways in individual contexts can't make a significant impact on a problem of this complexity. The entire literature on training programs and organizational development unambiguously supports that judgment. The professor's relationship with each student is the functional unit of teacher preparation, but here we are dealing with a complex system of such units. Only a whole program, operated by a group of like-minded professors, in which people, process and policy all push toward the same goals, can exert a reliable influence on students. Program consistency is the key to strong treatment effects. The bottom line is that only a faculty group can make truly effective use of research in a teacher education program.

In most cases our inability to achieve the level of programmatic consistency required to produce strong treatment effects is due neither to a lack of faculty commitment nor to a lack of insight into the defects of the present system. Most professors of physical education think what they are doing matters a great deal. They have strong personal commitments to sport and physical activity as content, and to physical education as a school program. As to

recognition of problems, when in public settings professors, like most people, are inclined to attribute their failures to external factors beyond their control (lower quality of student recruits, inadequate institutional support, lack of time). In the safety of private conversation, however, many professors reveal a perfectly clear grasp of where the most serious and immediate problems lie. Most of those problems turn out to be internal and programmatic.

What, then, are the reasons for our inability to make significant improvement in undergraduate programs, and to do so by sustained and creative use of the knowledge base? In answering I speak only from my own experience and offer only the data of personal testimony.

The root impediment is the inability of most faculty groups to hammer out even limited consensus on program goals and needed reforms. The so-called democratic process used to make decisions and develop programs in the average department leaves half the faculty uncommitted to any decision, about a fourth prepared for active sabotage, and only the small remainder truly ready to live by the decision and do the required work.

Without process skills for dealing with disagreement and the building of commitment to decisions, much of what passes in the minutes of faculty meetings as progress on program development, is illusory. Much that is decided is not implemented, or comes to operate in ways far different than the designers intended. Neither research nor divine revelation can provide significant inputs to

program development under those conditions. Research is power only in the hands of a faculty capable of decisive and cohesive action.

The second root impediment to effective utilization of research is less obvious, but no less a barrier. There is just below the surface a pervasive uneasiness among professors about research (Adams, 1976). The distaste and anxiety which attach to formal inquiry are revealed in the unguarded moments of everyday language and discourse with students and colleagues. Traumatized by encounters with graduate school statistics, deeply distrustful of theory as impractical, guilty over not understanding complex and often poorly written research reports, resentful of other faculty members who brandish the magic jargon of science to browbeat their colleagues into submission on professional issues, profoundly uneasy over the enormous gap between the intellectual world of theory in teacher education and the practical realities of teaching in a public school, and afraid to admit any of this to anyone else, research anxiety proves not to be just the student's disease--it is the endemic illness of the teacher educator.

What, if anything, can be done to help faculty groups achieve strong consensus? What, if anything, can be done to help individual professors become more comfortable with research (and thus more likely to make use of it)? The standard responses in higher education are to form a committee, run the xerox machine and engage in exhortation. This sort of bureaucratic response was modeled to perfection in the 1983 NIE Teacher Education Improvement Project

(Lanier, 1984). Even when backed by federal funds those are not useful activities. Telling people what they ought to be doing and unsophisticated uses of top-down authority work about as well with college professors as the same strategies have worked with public school teachers--they don't work at all.

Some of the regional research and development centers have been attempting more thoughtful approaches to help teacher educators (Gee, 1985). The difficulty there is that such efforts usually involve retraining key faculty members, significant inputs of outside money and complex forms of collaboration with public school teachers. For most departments those are more likely to be the outcomes than the precursors of faculty development.

Self-help is the only viable option in most departments. At that point, however, we have closed the circle and are back at the starting place. If your experience has been like mine, you will have observed that most attempts to obtain consensus about faculty development schemes usually suffer the same fate as program revision. Despite the best of intentions, we rarely seem to get there.

One way to break into that closed circle is to develop a wider resource base for assistance <u>within the teacher education community</u>. At the University of Massachusetts, having had to find outside assistance to help us work on our own faculty development and program revision problems, we have been led to experiment with a new idea. We are providing individual or team consultants to help teacher educators in other institutions. We can't, of course,

provide solutions for other people's problems, but we can help to identify critical questions and assist faculty members in discovering ways (and reasons) to work together.

To make it a truly available service we have to work at cost. To make it worth the effort we must limit involvement to departments where a sizable majority of the faculty can discover genuine commitment to the process. We are still learning how to be effective in working with professional peers, but two things already are apparent: (a) there is demand for the service and (b) the feedback is positive even though real evidence of success is not yet available.

Carter's (1981, 1984) study of the teacher education professor again provides a clue to the positive reception given to inter-program assistance. In private interviews she found most professors confessing that they felt more support from and colleagueship with peers in other programs or even in other institutions, than with faculty in their own department. The well documented isolation of teachers may have some root in the ways teacher educators limit interaction among their students--and among themselves (Copeland & Jamgochian, 1985). No wonder professors seem pleased when intervention by a consultant provides little more than help in developing open dialogue with department colleagues. Alone in the midst of peers and an alien in the conventional world of higher education (Ducharme & Agne, 1982; Schwabel, 1985), the life of teacher educators may be far more lonely than anyone has yet appreciated.

The idea that renewal in teacher education demands professors be participants in staff development already is upon us (Hall,

1985). The idea that problems of support and accessibility will make it necessary for education professors to provide staff development services for each other, may just be dawning. Even modest knowledge of strategies for staff and organizational development should permit teacher educators to play a useful consultant role in other programs. While such cross-program collaboration clearly runs contrary to the prevailing political norms of inter-institutional behavior in higher education, it also is obvious that faculty groups can break the rule of isolation in ways that administrators dare not.

Finally, just to make sure that what is sauce for the goose also is sauce for the gander, the first required reading for anyone wanting to play a helpful role in someone else's program is the research literature on change and program development in teacher education. There is not a great deal to read (Brandt, 1981; Haney, 1981; Nelli, 1981; Nolan, 1985; Patriarca & Buchmann, 1983), but those who propose to urge the good medicine of research-based knowledge should first try some for themselves.

The problem of helping professors of physical education become more comfortable with research is best regarded as a matter of individual therapy and development (although staff-wide approaches might be imagined). Again, our experience at the University of Massachusetts provides the only data at hand. Patt Dodds and I co-teach a series of graduate level research courses (in research on teaching and research on preservice and inservice teacher

education) populated by school teachers and administrators, college faculty, and graduate students in education and physical education. Out of those experiences we have learned that traditional seminar and lecture/laboratory course formats are ineffective without prior attention to "research-anxiety-desensitization." People can't be angry or guilty about research if they are to work comfortably with research-based knowledge.

Methods which we have found helpful in desensitization include

1. rewarding the behavior of saying, "I don't understand . . .";
2. safe sharing of research consumption problems in small groups;
3. learning how to explain simple research reports to another person;
4. learning by examples and experience that 90% of consumer problems arise from the poor level of writing found in most research reports;
5. learning that technical discrimination concerning the adequacy of method, design and analysis need not always be the reader's primary concern;
6. learning that most inferential statistics are irrelevant to the needs of the practitioner-consumer of research.

Plenty of practice with rewards, avoidance of situations which make the student feel vulnerable, and modeling of positive examples of research in use, taken together form a treatment package which seems to work for many of our clients. It is more difficult to provide

testimony that once desensitized these teachers and professors return to work and make more use of research. If, however, the question is "do they become distinctly more at ease with research as exemplified by such behaviors as seeking out research in their own areas of interest?" the answer is a firm (and happy) yes.

I am no more hopeful about revolutionary reform in teacher education than any of you. What I am optimistic about is our ability to do some useful things to help each other. The trick is to stop blaming people (others or ourselves) and start dealing with the human problems which limit what our programs might become.

In his Presidential Address at the national meeting of The American Educational Research Association this spring, Lee Shulman (1985) said something which takes us back to Mr. Shaw and his wonderful canard. After arguing with passion that research does give us the basis for improving the work of teaching and teacher education, Shulman observed that the canard might be reconstructed to tell the truth rather than a lie.

THOSE WHO CAN, WILL BE DESTINED MERELY TO DO THINGS,
BUT THOSE WHO UNDERSTAND, SHALL BECOME THE TEACHERS.

To which we, with less eloquence but no less validity can add,

THOSE PROFESSORS WHO UNDERSTAND HOW TEACHERS LEARN TO TEACH,
SHALL TRULY BECOME THE TEACHER EDUCATORS.

## Footnote

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